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OBJECTIVES: To analyze use of anti-infective drugs for systemic administration (ATC-group J) in Serbia in 2010 year. **METHODS:** Data about use of anti-infective drugs for systemic administration in Serbia in 2010 was taken from the Agency for Drugs and Medical Devices of Serbia. **RESULTS:** Total use of all drugs in Serbia in 2010 was 966,26 DDD/1000 inhabitants/day. ATC-group J was on the eighth place according to amount of DDDs with 19,63 DDD/1000 inh/day or 2,03% of total consumption. According to the funding spent, this group was on the second position with 90.651.670,00€. In this group, subgroup with highest consumption were antibacterial drugs for systemic use (subgroup J01), with 19,35 DDD/1000 inh/day or 98,57% of total use in group J. This subgroup takes first place in funding spent with 59.740.274,49€ or 65,90% of total expended finances in this group in 2010. Beta-lactam antibacterial drugs with 11,71 DDD/1000 inh/day or 60,52% were drugs with highest use in this subgroup, macrolides and lincosamides were at second place with 3,23 DDD/1000 inh/day or 16,69%, while on the third place were quinolones with 2,09 DDD/1000 inh/day or 10,80% of total drug utilization inside this subgroup. Funding spent on beta-lactam antibacterial drugs was 36.469.664,56€ or 61,05%, macrolides and lincosamides 8.573.022,83€ or 14,35%, and for quinolones 6.745.763,79€ or 11,29% of total funding spent for subgroup J01 in the year 2010. **CONCLUSIONS:** In comparison to 2009 spending of group J in Serbia in 2010 year was decreased for 18,35 DDD/1000 inh/day or 48,31%. The amount of funding spent in this group, however, of drugs was decreased for only 20,03%.

PCV12

DETERMINANTS OF EXPOSURE TO POTENTIAL INTERACTIONS BETWEEN ANTIPLATELET DRUGS, ANTICOAGULANTS, DIGOXIN AND COMMON CHINESE MEDICATIONS IN TAIWAN

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OBJECTIVES: To estimate the prevalence of potential interactions between antiplatelet drugs, anticoagulants, digoxin and Chinese medications (CM) and further to explore the determining factors associated with the occurrence of potential interactions. **METHODS:** This study assessed the prevalence of exposure to the major interactions between the seven selected western medications commonly used for the cardiovascular diseases (i.e., aspirin, clopidogrel, digoxin, dipyridamole, heparin, ticlopidine, and warfarin [in terms of high risk western medications, HRWM]) and selected common used CM (i.e., American ginseng, Asian ginseng, danshen, and dong quai), using the two-million National Health Insurance (NHI) Research Database in Taiwan. Both univariate and multivariate logistic regression analyses were conducted to identify the contributing factors (e.g., baseline demographics, comorbidities, health services utilizations) of potential major interactions incidence. **RESULTS:** While 14.7% of HRWM users (19,431/131,804) ever used those selected CM concurrently at anytime in 2007, 81.9% (15,919/19,431) of HRWM-CM concurrent users had been exposed to at least one combination of potential major interactions. Anticoagulants (i.e., heparin and warfarin) users were more likely to be prescribed with the selected CM with major interactions (86.7% and 86%, respectively). The concomitant use of aspirin with *dong quai or Asian ginseng* was more prevalent than others. The factors that statistically significantly associated with the incremental exposure of potential major interactions included female sex, age 45-84 years old, higher number of outpatient visits, distinct medications prescribed, and previous diagnosis of stroke. In contrast, those HRWM-CM users with high monthly income, enrolled in the West region of Taiwan NHI, and had previous history of acute respiratory infection were less likely to exposure to the major interactions of HRWM-CM use. **CONCLUSIONS:** The exposure of the major interactions with CM was relative prevalent among HRWM users in Taiwan. Further research is needed to investigate the outcomes associated with such combinations.

PCV13

PERCEPTIONS OF HEALTH DURING PREGNANCY INCREASE THE RISK OF CARDIOVASCULAR DISEASE

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OBJECTIVES: To examine the prospective association between perception of health during pregnancy and cardiovascular risk factor of mothers 21 years after the index pregnancy. **METHODS:** Data used were from the Mater University Study of Pregnancy (MUSP), a community- based prospective birth cohort study begun in Brisbane, Australia, in 1983. Logistic regression analyses were conducted. **RESULTS:** Data were available for 3692 women. Women who perceived themselves as not having a straight forward pregnancy had twice the odds (adjusted OR 2.0, 95% CI 1.1-3.8) of being diagnosed with heart disease 21 years after the index pregnancy as compared to women with a straight forward pregnancy. Apart from that, women who had complications (other than serious pregnancy complications) during the pregnancy were also at 30% increased odds (adjusted OR 1.3, 95% CI 1.0-1.6) of having hypertension 21 years later. **CONCLUSIONS:** As a whole, our study suggests that pregnant women who perceived that they had complications and did not have a straight forward pregnancy are likely to experience poorer cardiovascular outcomes 21 years after the pregnancy.

CARDIOVASCULAR DISORDERS - Cost Studies

PCV15

A COST-EFFECTIVENESS ANALYSIS BETWEEN AMLODIPINE AND ANGIOTENSIN II RECEPTOR BLOCKERS IN STROKE AND MYOCARDIAL INFARCTION PREVENTION AMONG HYPERTENSION PATIENTS IN CHINA

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OBJECTIVES: There were more than 200 million hypertension (HTN) patients in China. Uncontrolled HTN results in strokes, myocardial infarction (MI) and other complications, which are the leading cause of disability, death and severe economic consequence. We conducted an economic evaluation to determine the costs and quality-adjusted life years (QALYs) associated with Amlodipine (Norvasc) and the Angiotensin II Receptor Blockers (ARBs) in preventing stroke and MI among Chinese HTN patients. **METHODS:** A cost-utility analysis was conducted from the third-party payer perspective. A Markov model was constructed to estimate five year costs and health consequences (12-month cycles). For each arm, 10,000 patients were included for the simulation with Valsartan as comparator. Effectiveness data on incidence of stroke and MI were based on a published meta-analysis. Relative risks of stroke and MI were 0.84 and 0.83 respectively comparing Amlodipine and ARBs. Utility data were retrieved from the published literature. Costs of MI were retrieved from Chinese government reimbursement database. Costs of stroke were obtained from retrospective chart review and follow-up interviews in Chinese tertiary hospitals. Costs included costs of drugs, direct medical costs of hypertension management, stroke/MI treatment, and follow-up management. Discounting rate used for costs and QALYs was 3%. **RESULTS:** Total direct medical and drug costs of Amlodipine and Valsartan users are ¥111,731,716 and ¥132,058,611 respectively; total QALYs of Amlodipine and Valsartan users are 30,648.5 and 30,520.8, respectively. Amlodipine is dominant with lower costs and higher QALYs. This demonstrated that, compared with Valsartan, Amlodipine is a cost saving therapy with increased overall survival due to the reduction in stroke and MI events. When Ibersartan data were used in the comparison, the magnitude of cost saving changed but overall conclusion remained the same. **CONCLUSIONS:** Amolodipine is a cost saving therapy compared with ARBs in preventing stroke and MI for Chinese hypertension patients.

PCV16

ASSOCIATIONS BETWEEN PATIENT DEMOGRAPHICS, PHARMACOTHERAPY USE, AND COST, RESOURCE UTILIZATION, AND QUALITY-OF-LIFE BURDEN IN ADULT CARDIAC ARRHYTHMIA PATIENTS

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OBJECTIVES: To examine a cohort of patients with all forms of cardiac arrhythmia (CA) and identify factors associated with cost of care, health care resource utilization, antiarrhythmic agent use, and quality of life. **METHODS:** This retrospective database analysis utilized the household component data from 2004 to 2009 Agency for Healthcare Research and Quality Medical Panel Expenditure Survey. Patients aged ≥ 18 and had any form of CA (identified via ICD-9-CM codes 427.0-427.2, 427.31-427.32, 427.60-427.61, 427.69, 427.81, 427.89, 427.9, 785.0-785.1) were included. Primary independent variables of interest included age, gender, race/ethnicity, and pharmacotherapy use. Total annual health care expenditure, total annual prescribed medicine expenditure, physical and mental component summary scores (PCS and MCS) of the Short-Form 12 version 2 (SF-12), EuroQoL-5D (EQ-5D) utility scores (US version), proportion of patients using antiarrhythmic medications, number of prescribed medications associated with their cardiac arrhythmia, and proportion of patients with inpatient, outpatient, or emergency room visits were the primary outcomes of interest. Multivariate ordinary least squares (OLS) and generalized linear models (GLM) were used to analyze factors related to the aforementioned outcomes. To provide national estimates, all results were weighted and used standard errors (SE) calculated via Taylor-series approaches. **RESULTS:** Annually, 5,750,440 non-institutionalized US persons were estimated to suffer from cardiac arrhythmia between 2004 and 2009. Higher health care expenditure and utilization appeared in non-Hispanic whites and patients aged ≥ 65 ($p<0.05$). As compared to male patients, females had significantly higher prescribed medication expenditure, lower proportion of inpatient and emergency department visits related to arrhythmia, and lower PCS score ($p<0.05$). Patients on antiarrhythmics had significantly higher health care expenditures, lower proportion of emergency department visits related to arrhythmia, and higher MCS score ($p<0.05$) compared with their counterparts. **CONCLUSIONS:** Potential health disparities exist across age, gender, race, and antiarrhythmic use among CA patients.

PCV19

HOSPITALIZATION COSTS AND THEIR PREDICTORS IN PATIENTS WITH VENOUS THROMBOEMBOLISM IN CHINA

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OBJECTIVES: Venous thromboembolism(VTE), a condition that includes deep vein thrombosis(DVT) and pulmonary embolism(PE) is associated with major morbidity and mortality and causes huge economic burden. The objective of this analysis was to determine the hospitalization costs and their predictors due to DVT/PE in China. **METHODS:** A total of 278 patients with DVT or PE were randomly selected by stratified two-stage sampling from the China Basic Medical Insurance Databases in 2009 and 2010. All information of patient demographic characters, length of stay, clinical and costs were collected for the analysis. The descriptive statistics was used to describe patients' demographic characters, the hospital stay and the hospital costs. Univariate and multivariable analyses were also used in the data analysis. **RESULTS:** Total 278 patients (mean age 64.4 years; 58.3% male) were evaluated, 61.9% of patients with DVT and 38.1% of patients with PE. The mean

length-of-stay was 15.8 days (15.0 days for DVT patients and 17.0 days for PE patients). The mean total cost was Chinese Yuan (CNY) 16487.91 (median:9039.10, IQR:5128.80-18981.83), CNY 17698.61 (median:8643.68, IQR:5025.03-19594.93) in patients with DVT and CNY 14523.39 (median:9879.25, IQR:5870.43 -□□18630.41) in patients with PE. The average drug cost accounts for 47.4% of the total cost (mean: 6340.29; median:4479.94, IQR:2279.88-7991.12).The multiple linear regressions showed that patients from tertiary hospitals had 105% higher costs than those from primary hospitals ($P < 0.001$), and patients from municipalities had 48.6% higher costs than those from prefecture-level cities ($P < 0.01$). **CONCLUSIONS:** The costs per hospitalization associated with DVT or PE events are substantial. Hospitalization costs are now driven predominantly by the cost of drugs, levels of hospitals and cities.

PCV21

HOSPITAL BASED COST SURVEY OF ACUTE CORONARY SYNDROME IN SOUTH KOREA

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OBJECTIVES: Acute coronary syndromes (ACS) consist mainly of ST-segment elevation myocardial infarction (STEMI) and unstable angina (UA)/non-STEMI (NSTEMI). ACS showed an enormous medical, social, and economic burden worldwide. ACS in the form of myocardial infarction is responsible for almost half of all deaths related to cardiovascular disease. South Korea compared to the OECD country average, shows high cardiovascular morbidity and mortality, and the recurrence rate is increasing every year. We examined the direct cost of hospitalization for ACS which planned percutaneous coronary intervention (PCI) using medical cost survey in South Korea. **METHODS:** We conducted a cost survey to examine the actual direct medical costs of the team of cardiologists, technicians of intervention and reimbursement reviewers in the hospital. To examine the cost data of a patients who received procedures, operations and admissions. We could select index patient cases through medical chart review as he/she had ever been visited the hospital since last 1 year. Through delphi panel discussion and reviewing, we refined the cost data excluding non-related ACS treatment in index case. **RESULTS:** It is the first survey of the actual cost in ACS. The total medical cost for ACS patients who have undergone the procedure was 4.451 million Korean won. The cost is lower level if considering difficulties in surgery. But among the components in ACS, the cost of stents and devices were largely accounted for the total cost. **CONCLUSIONS:** The medical cost of ACS in Korea is a burden to both patients and society, due to increasing recurrence in cardiovascular disease. Among the total cost, the cost of stents is higher than the inpatient cost. This is one of the reasons of the high medical cost in ACS. This result will have as implication the adjustment of the cost of stents and devices in ACS treatment in South Korea.

PCV22

PHARMACIST'S INVOLVEMENT IN A MULTIDISCIPLINARY ISCHEMIC STROKE TEAM IN AND ITS ASSOCIATED COST AVOIDANCE

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OBJECTIVES: Stroke is a major cause of death around the world. This study aims to evaluate the quality of care in pharmacist's participation in a multidisciplinary ischemic stroke team, and the potential cost avoidance associated with the recommendations made by clinical pharmacists. **METHODS:** We conduct a retrospective study at a stroke center with pharmacist participation in medical rounds. Six hundred and forty-eight patients who suffered with stroke attack 10 days before admission are enrolled into sample. Data collects from November 2008 to September 2010. The patients with hemorrhage stroke are excluded from sample. Quality of acute stroke care is assessed by five pharmaceutical care-related performance indicators according to American Heart Association/American Stroke Association Get With the Guidelines-Stroke program (GWTG-Stroke). The cost avoidance is measured by the scored probability of harm. **RESULTS:** Study results show that there is significantly improved in four performance indicators in the year of 2010 and 2008. Indicators with significant improvement include intravenous thrombolytic (24.00% vs. 00.00%), early and discharge antithrombotic (95.93% vs. 93.33%, 96.56% vs. 93.18%), and anticoagulation for atrial fibrillation (71.43% vs. 20.00%). The indicator of prescribing rate of lipid-lowing medications, however, remains stable over two separate periods (51.70% versus 52.70%) due to the restriction of the National Health Insurance Policy. The assumption that cost of prolonged length of hospital stay due to ADE is about $5000 NTD. Therefore, cost avoidance was NT $2,207,816 NTD in this study. **CONCLUSIONS:** This study demonstrates that pharmacists involvement in a multidisciplinary ischemic stroke team are associated with facilitating the quality of care and increasing potential cost avoidance.

PCV23

ECONOMIC EVALUATION OF EZETIMIBE CO-ADMINISTRATION FOR HIGH CORONARY HEART DISEASE (CHD) RISK PATIENTS NOT AT GOAL WITH CURRENT STATIN THERAPY IN THAILAND

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OBJECTIVES: To evaluate cost-effectiveness of adding ezetimibe to simvastatin versus a switch to rosuvastatin or atorvastatin for high CHD risk patients who cannot attain treatment goal (LDL-C ≥ 100 mg/dL) on their current simvastatin dosage from Thai payer perspective. **METHODS:** A published Markov model (Cook et al. 2004) was used to project lifetime costs and outcomes of lipid-lowering treatment in primary and secondary CHD prevention. Lipid efficacy data were obtained from clinical trials. Risks of CHD events and non CHD-related mortality rates were estimated by using Framingham Heart Study risk equations and information from Ministry of Public Health (MOPH), respectively. Disease-related costs were obtained from published local studies. Drug prices were those published by MOPH. All costs were expressed in THB 2010 values. Future costs and outcomes were discounted at 3%. Two scenarios were compared in the analysis: the addition of ezetimibe to simvastatin 20 mg versus switching to rosuvastatin 10 mg and the addition of ezetimibe to simvastatin 40 mg versus switching to atorvastatin 40 mg. **RESULTS:** Ezetimibe co-administration increased life expectancy (LY) by 0.15 and 0.26 years and resulted in 0.07 and 0.12 additional quality-adjusted life years (QALY) when compared to a switch to rosuvastatin and a switch to atorvastatin, respectively. The QALY gained would yield lifetime cost-savings of Baht 1,106 and 2,137 per patient for such comparisons. Similar results were obtained where costs and outcomes were either discounted or undiscounted. The sensitivity analyses showed that results were robust to changes across scenarios. **CONCLUSIONS:** This analysis suggested that addition of ezetimibe to simvastatin is the dominant treatment strategy (more effective and less costly) in both scenarios. The results are very imperative to assist policy decision-making in order to increase access to second-line treatment option for patients not achieving lipid treatment goals with simvastatin monotherapy in Thailand.

PCV24

THE PRACTICAL ASSESSMENT OF SAME-DAY DISCHARGE WITH SCHEDULED TRANS-RADIAL PERCUTANEOUS CORONARY INTERVENTION

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OBJECTIVES: In response to TW-DRG implementation, based on safety, through the radial artery cardiac catheterization intervention, how to make patients discharged earlier, save health care costs and create a win-win between patients and hospitals. **METHODS:** In this retrospective study in Han-Ming Hospital, Taiwan, we enrolled 282 cases from January 1, 2006 to December 31, 2010. **RESULTS:** In the admission less than 24 hours after the PCI treatment, there were 129 males and 51 females (64.3±12.5 years, mean± s.d.). Besides, in other group over 24 hours, there were 74 males and 28 females (69.1±11.5 years). Using Logistic Regression Analysis, age <65 years (RR 1.683, 95%CI 1.943-3.031, p-value 0.010,OR: 2.647,95%CI: 1.009-6.941, p-value 0.030)□ATroponin-I <1 ug/L(RR 1.963, 95%CI 1.254-15.155, p-value 0.001,OR: 2.053, 95%CI: 1.240-17.601, p-value 0.004)□Alesion numbers < 2(RR 1.402, 95%CI 1.330-5.955, p-value 0.001,OR:1.128, 95%CI: 1.120-10.617, p-value 0.008)□ATreatments using stents (RR 1.963, 95%CI 1.254-15.155, p-value 0.018,OR: 4.688, 95%CI:1.443-15.232, p-value 0.033)□Avascular type such as A & B1 (RR 1.683, 95%CI 1.037-2.731, p-value 0.017,OR: 2.569, 95%CI: 1.751-8.794, p-value 0.036)□Anon-complication (RR 2.153, 95%CI 1.979-4.473, p-value 0.039,OR: 3.891, 95%CI: 1.011-25.801, p-value 0.043). **CONCLUSIONS:** If patients have characteristics like age <65 years, Troponin-I <1 ug/L, lesion numbers less than 2, using stents, vascular type diagnosed as A and B1, and non-complication, they could tend to discharge in 24 hours after PCI treatment.

PCV25

A PHARMACOECONOMIC ASSESSMENT OF RECOMBINANT TISSUE PLASMINOGEN ACTIVATOR THERAPY FOR ACUTE ISCHEMIC STROKE IN A TERTIARY HOSPITAL IN CHINA

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OBJECTIVES: To conduct a pharmacoeconomic assessment of thrombolysis by intravenous recombinant tissue plasminogen activator (rt-PA) therapy for acute ischemic stroke (AIS) in a tertiary hospital in China. **METHODS:** A retrospective analysis was conducted using medical records data among patients hospitalized for AIS and receiving rt-PA therapy (time window: 6 hours after AIS) from September 2007 to September 2008. A conservative therapy group (including antiplatelet, anticoagulation, statin, traditional Chinese medicine) were matched (1:1) on age, gender, risk factors (hypertension, diabetes, previous stroke/TIA, high cholesterol/lipids and coronary heart disease), Glasgow Coma Scale (GCS) and National Institutes of Health Stroke Scale (NIHSS). Two groups were compared on 14th-day clinical outcomes, utilities estimated from modified Rankin Scale (mRS) scores, and costs. **RESULTS:** Forty patients (65% male, age 65±11 years) in rt-PA and 40 patients (58% male, age 69±11 years) in conservative group were included. No differences were found in mortality between 2 groups. Among survivors on 14th day, NIHSS (mean±SD: 1.89±2.64 vs. 4.38±5.57; P=0.018 and mRS (0.77±1.26 vs. 1.92±1.80; P=0.002) were lower in rt-PA (N=37) than conservative group (N=39). Barth Index (BI) was higher in rt-PA group (90.57±16.71 vs. 74.36±25.88; P=0.002). Hospital length-of-stay (LOS) was shorter in rt-PA (15.4±7.8 days) than conservative group (19.2±8.80 days; P=0.05). Total costs were not significantly different: ¥22,826±11,049 (rt-PA) vs. ¥18,605±10,713 (conservative), while total drug costs were higher in rt-PA (¥13,379±4,765) than conservative group (¥10,225±6,222) (P=0.017). No difference was found in cost of hospital care (¥2,574±2,608 vs. ¥2,275±2,723), laboratory exam (¥1,854±1,037 vs. ¥1,867±974), etiology exam (¥2,335±823 vs. ¥2,125±1,156) and traditional Chinese medicine (¥354±266 vs. ¥278±266) between rt-PA and conservative group. Utility gained with rt-PA was 0.04 (0.61 vs. 0.57). **CONCLUSIONS:** Intravenous rt-PA was associated with lower patients' disabilities, less hospital days, and comparable total costs compared to conservative therapy for the management of AIS in this study population.

PCV26

LIFETIME COST-EFFECTIVENESS ANALYSIS OF TICAGRELOR IN PATIENTS WITH ACUTE CORONARY SYNDROMES BASED ON THE PLATO TRIAL: A SINGAPORE HEALTH CARE PERSPECTIVE